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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/566,814

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Kai Judin

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MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER

MCGUTHRY BANKS, TIMA MICHELE

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

08/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,814	Applicant(s) JUDIN ET AL.	
	Examiner TIMA M. MCGUTHRY-BANKS	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Status of Claims

Claims 1-19 are amended and Claims 20 and 21 are cancelled.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement filed 9/24/2008 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the non-patent literature reference has no date. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the metal separation process" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claims 1, 8-11, 13, 17 and 18 collectively claim a "worse fraction" and a "better fraction." It is unclear what is meant by something that is "better" or "worse" with respect to the claimed process. The claim does not provide for a way to know what in particular makes the fractions better or worse, or how one determines this. Claims dependent upon claims 1 or 13 are likewise rejected under this statute.

Claim 4 recites the limitation "the solid matter content in the reactor" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the underflow of the classification device" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the overflow of the classification device" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the pipe extending from the metal separation reactor" in lines 6 and 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the centrifugal force" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Means plus Function Analysis

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Claim	Prong 1 <i>“means for” or “step for”</i>	Prong 2 <i>modified by functional language</i>	Prong 3 <i>modified by sufficient structure, material or acts</i>	Written description
13	“means for”	“returning”	“the better substance fraction to the metal separation reactor”	none
13	“means for”	“removing”	“the worse substance from the reactor”	none

Claim element “means for returning the better substance fraction to the metal separation reactor” is a means plus function limitation that invokes 35 U.S.C 112, sixth paragraph. However, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material or acts perform the claimed function.

Claim element “means for removing the worse substance from the reactor” is a means plus function limitation that invokes 35 U.S.C 112, sixth paragraph. However, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material or acts perform the claimed function.

Applicant is required to

- (a) amend the claim so that the claim limitation will no longer be a means plus function limitation under 35 U.S.C. 112, sixth paragraph; or
- (b) amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or
- (c) state on the record where the corresponding structure, material or acts are set forth in the written description of the specification that perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 2181 and 608.01(o).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 7, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Ghatas (US 4,168,970).

Ghatas anticipates the claimed invention. Ghatas teaches a method for purifying zinc sulfate solutions containing Cu, Cd and Co impurities (abstract). Liquid-solid separation is effected in such a way that the final solution resulting therefrom is essentially free of solids. The solid phase from this step is recycled back to the first stage and the liquid phase is suitable for electrolysis (column 5, lines 29-35). Separation occurs in a cyclone (Figure 2). Regarding Claim 2, the zinc sulfate solution results from a precipitation reaction (column 1, lines 10-22). Regarding Claim 3, the solution is purified (column 4, lines 65-69). Regarding Claim 4, the solids content is 200 g/L (column 6, line 14). Regarding Claim 6, classification occurs with a cyclone. Regarding Claim 7, Ghatas teaches a cyclone. Regarding Claim 11, the solids recycled in the process reads on being “better,” and consists of particles (column 5, line 41-47). Regarding Claim 12, the process can be continuous (column 3, line 21).

Claim 13-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ghatas.

Ghatas anticipates the claimed invention. Ghatas teaches purifying zinc sulfate solutions as shown below in FIG. 3

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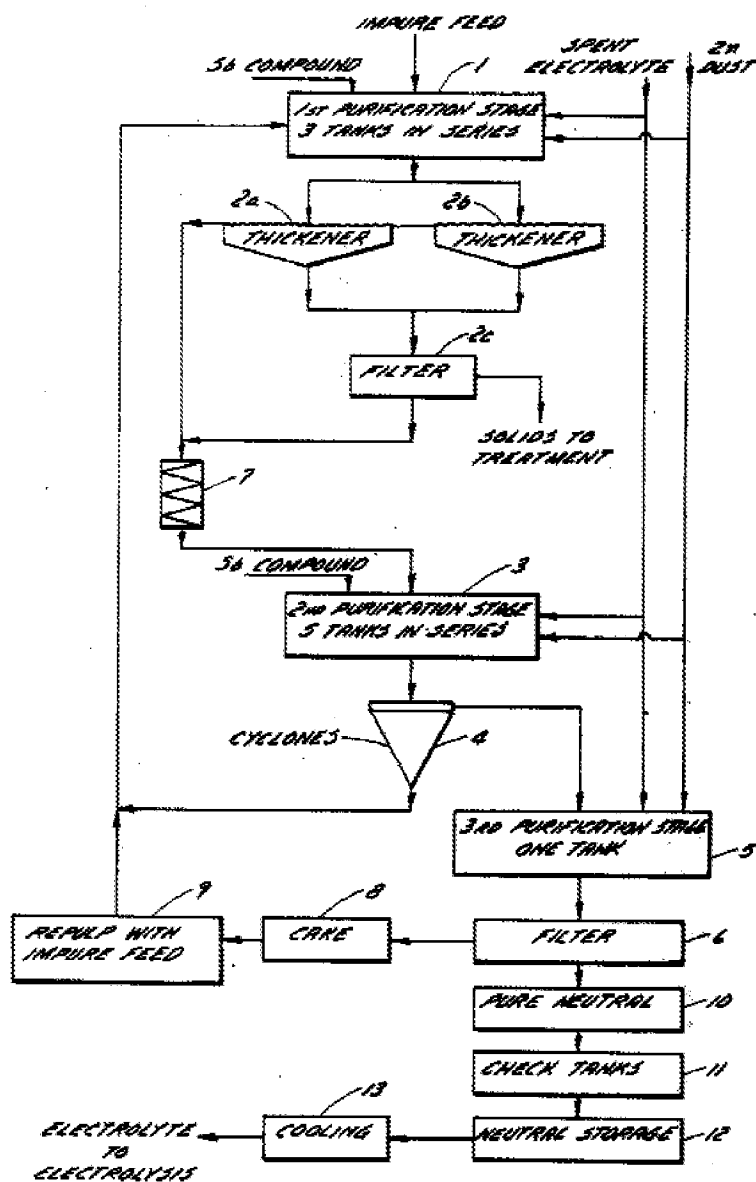


FIG. 3

The metal separation reactors are read by 1, 2a, 2b, 2c and 3. The feeding device is read by shown by the line "IMPURE FEED." The junction line is shown by the line between 3 and 4, the classification device is shown by cyclones 4, the pipe extending from the metal separation reactor is shown by the line between 3 and 4, recycling means is shown by the line from 4 and 9 to 1 and means for removing the worse substance is shown by the line to 5. Regarding Claim 14,

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the cyclone is placed substantially in conjunction with the metal separation reactor. Regarding Claims 15 and 16, 4 is a cyclone. Regarding Claims 17-18, language in the claim that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation, for example statements of intended use or field of use. See MPEP § 2106.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghastas as applied to claim 1 above.

Ghastas discloses the invention substantially as claimed. However, Ghastas does not specifically teach that the underflow is a worse fraction as in Claim 8, that the overflow is a better fraction as in Claim 9, and that the fraction that is worse contains mainly coarse fraction as in Claim 10. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the two streams from the cyclones reads on fractions being better or worse, because depending on how one defines the better or worse fraction, whatever materials are processed in the prior art in a manner analogous to that presently claimed would fall within the scope of the claimed process, i.e. one would have a "better" or "worse" fraction in the prior art process.

Allowable Subject Matter

Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding Claim 5, Ghastas does not disclose or suggest classifying sludge particles into a coarser and finer fraction as claimed.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lynn et al (US 4,425,228) teaches a wet-classifying method for recovery of carbon and iron-bearing particles (title). However, Lynn et al does not teach cobalt removal. Rastas et al (US 4,383,979) teaches a process for the recovery of zinc, copper and cadmium in the leaching of zinc calcine (title). However, Rastas et al does not teach cobalt removal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMA M. MCGUTHRY-BANKS whose telephone number is (571)272-2744. The examiner can normally be reached on M-F 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Wyszomierski/
Primary Examiner
Art Unit 1793

/T. M. M./
Examiner, Art Unit 1793
28 August 2009